CLAIMS

1. A method of verifying a bearing gap between a shaft and a shaft seat of a hydrodynamic bearing, comprising the steps of:

positioning the shaft into its functional position within the shaft seat of a test bearing;

causing a measuring fluid to flow through the bearing gap; and

measuring one or more parameters characterizing the through-flow of the fluid through the bearing gap.

2. The method according to claim 1, wherein the verification is performed before final assembly of the hydrodynamic bearing.

3. The method according to claim 1, wherein the verification is performed before a lubricant is introduced into the bearing gap.

4. The method according claim 1, wherein the measuring fluid is a gaseous measuring fluid.

5. The method according to claim 1, wherein the measuring fluid flows through the bearing gap in a flow direction which is substantially parallel to a longitudinal axis of the shaft.

6. The method according to claim 1, wherein the measuring fluid is introduced into the bearing gap in such a way as to result in a non-turbulent flow state of the measuring fluid.

7. The method according to claim 1, wherein the test bearing comprises an open end at each end of the shaft seat for the through-flow of fluid.

8. The method according to claim 7, wherein the measuring fluid flows through the test bearing from one open end.

9. The method according to claim 1, wherein the measuring fluid is introduced to the test bearing with a specific start pressure.

10. The method according to claim 9, further comprising a step of measuring the difference in pressure compared to the start pressure as a parameter characterizing the through-flow of fluid.

11. The method according to claim 9, further comprising a step of measuring the start pressure before introducing the measuring fluid into the test bearing.

12. The method according to claim 1, wherein the shaft is fixed in its functional position with respect to the direction of the through-flow.

13. The method according to claim 1, wherein a contact element is applied to the shaft preventing the movement of the shaft in the direction of through-flow.

14. The method according to claim 13, wherein a force is exerted on the shaft in the direction opposite to the through-flow direction, said force being greater than a lift force of the measuring fluid on the shaft.

15. The method according to claim 1, further comprising a step of classifying the test bearing in accordance with the measurement results verified in said measuring step.

16. The method according to claim 15, wherein said measurement results are determined after quasi-stationary conditions have been reached.

17. A device to verify a bearing gap between a shaft and a shaft seat of a test hydrodynamic bearing, said device comprising:

an admission device to introduce measuring fluid into the bearing gap of the test bearing; and

a measuring device to measure at least one parameter characterizing the fluid through-flow through the bearing gap.

18. The device according to claim 17, further comprising a pressure reducer defining a start pressure of the measuring fluid before said measuring fluid is introduced into the bearing gap.

19. The device according to claim 17, wherein the measuring device includes at least one pressure sensor.

20. The device according to claim 19, wherein at least one pressure sensor is arranged before the test bearing in relation to the direction of fluid flow.

21. The device according to claim 19, wherein at least one pressure sensor measures a pressure difference between a start pressure of measuring fluid introduced into said bearing gap and a resulting pressure of through-flow measuring fluid emerging from the bearing gap.

22. The device according to claim 17, wherein the admission device comprises a feeding device through which the measuring fluid is introduced into the bearing gap at one end thereof and wherein said feeding device seals the bearing gap.

23. The device according to claim 17, further comprising a holding device positioning the shaft in its functional position in the shaft seat.

24. The device according to claim 23, wherein the holding device comprises a contact element preventing the movement of the shaft in the through-flow direction.

25. The device according to claim 23, wherein the holding device comprises a force exerting device exerting a force on the shaft in the direction opposite to the through-flow direction of the measuring fluid.